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Men's Sexual Self-Schema

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Sexual self-schemas are cognitive generalizations about sexual aspects of oneself. In Part 1, a measure of men's sexual self-schema is developed. Studies of test–retest and internal consistency reliability and validity studies of factor analysis, internal structure, convergent and discriminant validity, process, group difference, and change are provided. The construct consists of 3 dimensions: passionate–loving, powerful–aggressive, and open-minded–liberal traits. In Part 2, the data suggest that men's sexual schema is derived from past sexual experience, is manifest in current sexual experience, and guides future sexual behavior. In Part 3, the data document the cognitive processing aspects of sexual schema. Consistent with the investigators' schema research with women, these data substantiate the importance of cognitive representations of sexuality.

Historically, research on male sexuality has focused on the assessment of men's sexual behaviors, sexual responses, and related sexual affects or attitudes. In contrast, little research has explored men's sexuality as a social–cognitive phenomenon or attempted to map men's cognitive views of the sexual self. Andersen and Cyranowski (1994) offered the concept of sexual self-schema as an aspect of one's self-view that is specific to sexuality and operationalized this construct with respect to women's sexuality. Conceptually, men should also possess sexual self-schemas; however, the content of men's sexual self-views was expected to differ from that obtained with women. Here we outline the conceptual framework for men's sexual self-schema and detail the psychometric properties of a scale to measure a man's sexual self-schema. First, however, we offer a brief overview of the common approaches to male sexual assessment. Second, we outline the conceptual and methodological advantages of the sexual self-schema approach, and third, we highlight the literature related to the gender differences that were expected to emerge in the content of men's (vs. women's) sexual self-views.

THE ASSESSMENT OF MALE SEXUALITY

Sexual behavior, sexual responding, and individual differences in men's sexual affects or attitudes have been the traditional foci for assessment. Strategies to document male sexual behavior have a long history in sexuality research and include such early efforts as the interview-based Kinsey method (Kinsey, Pomeroy, & Martin, 1948), as well as self-report measures of various heterosexual behaviors (e.g., Bentler, 1968; Brady & Levitt, 1965; Cowart-Steckler, 1984; Derogatis & Melisaratos, 1979; Zuckerman, 1973) and more recent epidemiological methods using telephone interviews and in-person surveys (e.g., Laumann, Gagnon, Michael, & Michaels, 1994). Male sexual responses have proved amenable to psychophysiological methods. Such assessments include measures of penile tumescence or rigidity designed to determine vascular or neurologic deficits associated with male erectile disorder. In addition, self-report measures that tap men's subjective experience of sexual responding are common and include the assessment of perceived sexual desire, sexual arousal, erectile function, ejaculatory control, and sexual satisfaction (e.g., see the Derogatis Sexual Functioning Inventory [DSFI] in Derogatis & Melisaratos, 1979; the Brief Sexual Function Questionnaire for Men in Reynolds et al., 1988; or the Golombok Rust Inventory of Sexual Satisfaction in Rust & Golombok, 1986). Finally, other self-report instruments have been developed to assess individual differences in men's sexual affects (e.g., erotophobia, sex guilt, and sex anxiety) and sexual attitudes (e.g., attitudes about casual sex, safe sex practices, and common rape myths; e.g., see Burt, 1980; Fisher, Byrne, White, & Kelley, 1988; Katz, Gipson, Kearl, & Kriskovich, 1989; Mosher, 1966; Simpson & Gangestad, 1991a).

Because these methods can be explicit and, at times, intrusive, they have been vulnerable to both respondent bias (such that conservative or embarrassed individuals refuse to participate) and reporting bias (e.g., socially desirable but inaccurate responding, including underreporting or, conversely, exaggeration or sexual bragging; for discussions, see Catania, Gibson, Chitwood, & Coates, 1990; Weinhardt, Forsyth, Carey, Jaworski, & Durant, 1998). In addition, these methods do not include cognitive representations of men's sexuality (for conceptual discussions, see Simon & Gagnon, 1987; Snell, Belk, & Hawkins, 1990; Snell & Papini, 1989).

THE SEXUAL SELF-SCHEMA APPROACH

Research on the self suggests that the self-concept is multifaceted (e.g., Carver & Scheier, 1981; Epstein, 1980; Markus & Wurf,

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1987). Hence, there may be some cognitive representations of the self that have centrality and that are likely to become activated within specific life contexts. Andersen and Cyranowski (1994) proposed one such facet, which they termed sexual self-schema. Sexual self-schemas have been defined as cognitive generalizations about sexual aspects of oneself that are derived from past experience, are manifest in current experience, are influential in the processing of sexually relevant social information, and guide sexual behavior (Andersen & Cyranowski, 1994).

Previous research related to women's sexual self-views attests to the predictive power and clinical utility of the sexual self-schema concept. Development and testing of an empirically keyed, trait-adjective rating scale revealed that women's sexual self-schemas include two positive aspects—romantic–passionate and open–direct self-views—and one negative aspect—embarrassment or conservativism, which may deter female sexual expression. This research indicated that women with clearly positive sexual self-views provide positive evaluations of sexual behaviors, report high levels of sexual arousal and low levels of sexual anxiety, and anticipate having (and actually do have) more active and satisfying sexual lives. Conversely, women holding clearly negative sexual self-views report restricted sexual behavior repertoires, heightened levels of sexual anxiety and avoidance, low sexual arousal, and more conservative (and, at times, negative) attitudes and values regarding sexual matters (Andersen & Cyranowski, 1994; Cyranowski & Andersen, 1998). Women's sexual self-schemas are also manifested cognitively, in that women with positive self-views can rapidly make decisions and generate more behavioral examples of their positive self-views in contrast to women with negative self-views (Cyranowski & Andersen, in press). It is important to note that this individual difference variable can predict important sexual outcomes, as sexual self-schema is related to sexual behavior and sexual responses for gynecologic cancer survivors (Andersen, Woods, & Copeland, 1997). Completion of the Women's Sexual Self-Schema Scale involves simple self-descriptiveness ratings of 50 trait adjectives (26 scored and 24 filler), making it a brief and easy-to-administer scale. Moreover, the scale is an unobtrusive measure of sexual cognition or sexual self-view, a feature that alleviates some of the most problematic response biases that accompany more sexually explicit or intrusive measures of sexuality.

GENDER DIFFERENCES: PERSONALITY AND SEXUALITY

Many studies have examined personality differences between men and women. Feingold (1994) used meta-analyses to combine more than 5 decades of normative data from personality inventories to examine gender differences in personality. He concluded that these findings were consistent with Bakan's (1966) theory that "males are higher than females on agentic (sometimes known as instrumental) traits and that females are higher than males on communal (sometimes known as expressive) traits" (Feingold, 1994, p. 430). Specifically, men tended to be more assertive and have slightly higher self-esteem than women, whereas women are higher in extraversion, anxiety, trust, and a trait that has been termed *tender-mindedness.* In related work on gender and self-esteem, Josephs, Markus, and Tafarodi (1992) reached conclusions complementary to those of Feingold (1994) and Bakan (1966), as well as to feminist scholars such as Baker-Miller (1986) and Gilligan (1982). They posited that men and women derive self-esteem, in part, from fulfilling gender-appropriate goals and society-determined standards: Women's self-esteem is determined by their ability to form and maintain connections and interdependence with others (i.e., to generate a collectivist network of relationships), whereas men's self-esteem is related to their ability to form a unique, independent identity separate from others (i.e., their ability to individuate themselves).

Few studies have examined the relationship between personality and sexuality. An early effort was that of Eysenck (1971, 1972) using his P-E-N (Psychoticism, Extraversion, and Neuroticism) model of personality. He reported that women who had high Neuroticism scores (characterized by anxiety, guilt, and self-consciousness) had less self-reported sexual experience, and individuals—especially men—high on Extraversion (characterized by confidence, sociability, and excitement seeking) were more sexually experienced. Costa, Fagan, Piedmont, Ponticas, and Wise (1992) administered the DSFI (Derogatis & Melisaratos, 1979) and the NEO Personality Inventory (Costa & McCrae, 1985) to 458 adults seeking treatment at a sexual dysfunction clinic. Among the female patients, Neuroticism was correlated with lower levels of sexual information and poorer body image, Extraversion was correlated with more frequent sexual fantasizing, and Openness, the most important dimension, was associated with greater levels of sexual information, sexual activity, and better body image. For male patients, Neuroticism was correlated with less sexual information and sexual experience, a negative body image, and lower sexual satisfaction. Extraversion, in contrast, had positive effects across dimensions in terms of sexual experiences, drive, body image, and satisfaction. Openness had similar positive effects and was also correlated with higher levels of sexual information.

Certainly there is a long history of interest in the study of men's sexuality separate from women's sexuality, with the best example being the gender-specific Kinsey volumes (Kinsey et al., 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953). It is interesting to note that in their meta-analysis, Oliver and Hyde (1993) reported that there were, in fact, relatively few gender differences in sexuality; effect sizes differentiating the genders were only of small-to-moderate size. Furthermore, the values narrowed from the 1960s to the 1980s. The largest effect sizes, by far, were those showing that men tended to masturbate more frequently and had more positive attitudes toward casual sex (*d*s = .96 and .81, respectively), in comparison with effect sizes obtained for gender differences across other sexual phenomena (e.g., *d*s ranging from .10 to .57). There were no gender differences in sexual satisfaction.

FOCUS OF THE RESEARCH

These complimentary literatures provide important contextual data for the conceptualization of men's sexual self-schema. Our goal in Part 1 was to develop a novel, reliable, and valid indicator of cognitive aspects of men's sexuality, that is, men's sexual self-schema. We had three expectations about the nature of the construct. First, we hypothesized that a man's sexual self-view would have a component consistent with gender-appropriate goals translated to a sexual domain. Thus, men's tendency to individuate, claim uniqueness, and, in some sense, assert themselves and achieve should be manifest. Second, we anticipated that openness

to experience would indeed play a sexually enhancing role for men. Third, whereas establishing connections and interdependence is gender inconsistent for men, we hypothesized that emotionally expressive traits or romantic affects would, nonetheless, be important to the maintenance of sexual relationships and romantic attachments. For example, in *The New Male Sexuality,* Zilbergeld (1992) explored the tension associated with pressures to incorporate sex role consistent and inconsistent aspects within adult male sexual roles, and we expected to have both aspects emerge in men's cognitive view of the sexual self. In summary, we anticipated a gender-specific component related to the aspects of agency important for men's personality, a component of openness to experience, and a component suggestive of an ability to experience sexual–romantic affects; all of these aspects appear generally relevant to prior research on assessment of sexual behaviors, responses, and sexually relevant individual differences. In Part 2 we tested the main tenets of the definition of sexual self-schemas: they are derived from past experience, are manifest in current experience, and give guidance to future sexual behavior. In Part 3 we document the cognitive aspect of the sexual self-schema construct and illustrate it using cognitive, information-processing paradigms that involve the generation of schema-relevant information about the self and the speed and accuracy of making schema-relevant self-judgments.

PART 1: CONCEPTUALIZATION AND SCALE DEVELOPMENT

Method: Participants

Two samples were obtained. First, data were collected from male undergraduates at The Ohio State University (OSU) who were enrolled in an introductory psychology course and who received course credit for experiment participation. Data from 8 different samples (with *n*s ranging from 20 to 295) were collected over four consecutive academic quarters. The mean age of the undergraduate men was 20 years, with a specific mean education level between that of a college freshman and a sophomore (13.4 years).

Second, a sample of older men ($N = 28$) was also obtained. It included older students returning to OSU to complete their degrees who were also enrolled in an introductory psychology course, as well as additional friends and acquaintances of the experimenters. We recruited this sample to reduce the likelihood of generational differences in the initial item pool and to test for generalizability at the item level (see Part 1, Study 1 below). These men ranged in age from 27 to 77, with a mean age of 52 years. The sample was similar to the undergraduates in education level in that *some college* (the level between *high school graduate* and *college graduate*) was the descriptive mean.

Procedures and Results

Item Generation

An initial pool of 300 trait adjectives was generated from three sources. First, 200 items were selected from Anderson's (1968) list of 555 personality trait words. These words were selected by the investigators as representing 100 positive (e.g., *considerate, perceptive*) and 100 negative (e.g., *conservative, cold*) aspects of men's sexuality. Items of each type represented the full range of likableness values, as provided by Anderson. Second, additional adjectives were generated by the investigators as potentially reflecting other aspects of sexual self-concept (e.g., *loving, passionate*) not yet represented. Third, a small sample of undergraduate males ($N = 20$) was also asked to brainstorm to generate adjectives that described "a sexual man." In combination, 300 items were generated for the initial item pool, and 16 additional items were added later and tested in a second phase of item elimination.

Item Selection

Initial Selection: Study 1

The 300 trait adjectives were first rated on their relevance to the conceptualization of a sexual man. Undergraduate men ($N = 20$) were provided with the following instructions:

> This study is the first part of a research program to develop a measure of sexual self-concept. As a beginning, we need to understand your personal opinion of a "sexual man." As you think of the concept of a "sexual man," we are interested in what kinds of attributes and qualities come to your mind.

Participants rated each of the 300 trait adjectives on a 7-point scale, ranging from 0 (*not at all descriptive of a sexual man*) to 6 (*very much descriptive of a sexual man*).

On the basis of these data, approximately half of the items were eliminated. Adjectives selected for further consideration were the 102 items with the highest mean ratings (i.e., those rated most descriptive of a sexual man), the 31 items with the lowest mean ratings (i.e., those rated least descriptive of a sexual man), and a stratified sample of 42 of the remaining items. The resulting list of 175 items was administered to the sample of older men with the same instructions for rating item relevance as descriptive of a sexual man.

A second undergraduate sample ($N = 42$) was given a list of 191 items for self-ratings. This list included the 175 items plus the additional 16 items generated by the experimenters to reflect potentially important dimensions of sexual self-schema (nervous–anxious and powerful–dominating) not previously sampled. Men were asked to rate each item on a scale ranging from 0 (*not at all descriptive of me*) to 6 (*very much descriptive of me*) for the measure entitled "Trait Adjective Ratings." Because we were interested in reducing response set biases, negativity and social desirability, and construct overlap with self-esteem at the item level, these participants also were administered several additional measures (see Appendix A for psychometric information): (a) the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), (b) the Marlowe–Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960), and (c) the Rosenberg Self-Esteem Scale (Rosenberg, 1965).

The second phase of item elimination included analyses of two sets of data: (a) the comparison of the first college sample and the sample of older men in their ratings of the trait adjectives' descriptiveness of a sexual man and (b) Pearson product–moment correlations from the second undergraduate sample providing the self-ratings of the 191 trait adjectives and the responses to the discriminant measures. Items with large mean rating differences (i.e., $\geq .75$ point in their descriptiveness of a sexual man between the samples of younger men ($n = 20$) and older men ($n = 28$) were eliminated. This resulted in the selection of a subset of items that had equivalent conceptual and empirical ranking for men ranging in age from 20 to 70. Next, items with the significant (or multiple

large) correlations with the discriminant (i.e., negative affect, social desirability) and convergent (i.e., self-esteem) measures in the second undergraduate sample (n = 42) were considered for elimination. Using these criteria, the list was reduced to 107 trait adjectives.

Final Selection: Study 2

We administered the 107-item list (entitled "Trait Adjective Ratings") to two additional samples of undergraduate men (n = 84 and n = 86). Participants rated the items on a 7-point rating scale ranging from 0 (*not at all descriptive of me*) to 6 (*very much descriptive of me*). We included the same discriminant measures as in Study 1, as well as a sample of sexually relevant criterion measures. This latter strategy uses the methodology of criterion keying (or selection). That is, we hypothesized that one's sexual self-concept should be related to, although not overlapping with, sexual behavior, sexual response, and selected attitudinal measures. Hence, the participants completed measures of the following criteria (see Appendix A for psychometric information):

1. Sexual behavior was measured with the Sexual Experience Scale (SES): Current from the DSFI (Andersen & Broffitt, 1988; Derogatis & Melisaratos, 1979), individual items regarding current and future sexual partners, and individual items regarding sexual history (e.g., the number of lifetime sexual partners).
2. Sexual attitudes were measured with the Attitudes Toward Sex Without Commitment and Casual Sex Indexes (from the Sociosexual Orientation Inventory [SOI]; Snyder, Simpson, & Gangestad, 1986).
3. Sexual arousal was measured with the Sexual Arousability Index (SAI; Hoon, Hoon, & Wincze, 1976), modified for use with men.
4. Sexual anxiety was measured with the SAI items along with an anxiety rating scale (Hoon, 1978; Chambless & Lifshitz, 1984).
5. Sexual aversion was measured with the Sexual Aversion Scale (Katz et al., 1989; Katz, Gipson, & Turner, 1992).
6. Love and romantic involvement were measured with the Passionate Love Scale (Hatfield & Sprecher, 1986) and individual items (e.g., the number of times one has fallen in love).
7. Sexual coercion and hostility were measured with the Sexual Experiences Survey (Koss & Gidycz, 1985; Koss & Oros, 1982) and the Hostility Toward Women Scale (Check, Malamuth, Elias, & Barton, 1985).

Pearson product–moment correlations were obtained for self-ratings of the 107 items with each of the discriminant and convergent measures. On the basis of this information, we again considered the strengths and weaknesses of each item, checking also for the replication of effects with prior samples. Eighty items correlating with affectivity or social desirability or having low correlations with criterion measures were eliminated, resulting in a reduced list of 27 trait adjectives. Thus, the item-selection process was designed to produce a measure that had items equivalent in meaningfulness across age generations, and then the items were intended to provide an optimal combination of higher convergent correlations, lower discriminant correlations, and coherence for the scale.

Validity

Content Validity

As noted previously, our intent was to develop a valid but unobtrusive measure of sexual self-concept. Inspection of Table 1 reveals that the 27 Men's Sexual Self-Schema Scale items, taken together, have minimal sexual overtones. They are, on average, of a positive valence but have some distribution across the scale. With the 7-point scale, higher ratings indicate greater descriptive relevance, with lower ratings being not at all descriptive of a sexual man. The majority of the adjectives tend to cluster in a zone of moderate descriptiveness (3.0 to 5.0). The item ratings for the undergraduates and older men are identical or differ by less than 1 point (<.75). This demonstrates scale equivalence in word choice and ratings across the ages sampled (i.e., 20-year-old to 70-year-old participants) in the younger and older men's notions of a sexual man.

Construct Validity: Studies 3, 4, and 5

In their classic articles, Cronbach, Meehl, and others (Campbell & Fiske, 1959; Cronbach & Meehl, 1955) recommended that construct validity analysis should include factor analysis and study of internal structure, demonstration of convergent and discriminant validity, analysis of process, documentation of group differences, and change over occasions. Therefore, studies were conducted in each area.

Study 3. To analyze the internal structure of the scale, responses of 614 male undergraduates to the 27-item schema scale measure were submitted to a principle-axis factor analysis with an oblique Harris–Kaiser rotation.[1] On the basis of an eigenvalue scree plot and factor interpretability, three factors were extracted. The rotated factor pattern with loadings for each of the 27 items is provided in Table 2. The first factor, labeled Passionate–Loving, includes 10 items. The second and largest factor, labeled Powerful–Aggressive, includes 13 items. The third and smallest factor, labeled Open-Minded–Liberal, includes 4 items.

Table 3 presents the means and standard deviations for the factors and the factor intercorrelations. Factor scores were created by summing item scores on each factor (with three words—*inexperienced, reserved,* and *conservative*—reversed keyed) to obtain three factor scores. The three factor scores were then summed to obtain a total sexual self-schema score. The intercorrelation data indicate the strong relationship of each factor to the overall score, with factor/total correlations ranging from .58 to .82. The factor intercorrelation data indicate that the factors are related but not redundant; the expected pattern was found, with the factor intercorrelations being positive and moderate in magnitude (ranging from .29 to .35).

Study 4. Before discussing the convergent and discriminant data, we review the analyses of measurement error. Some of the most common methodology problems with sexuality reporting

[1] This is an item-to-subject ratio of 1:23, which is more than twice the number of subjects typically recommended for a factor analysis. Not surprisingly, the factor structure replicates when the sample is halved and the factor analysis is run twice with samples of approximately 300 subjects each.

Table 1
Ratings of Sexual Self-Schema Items by Undergraduate Men (n = 20) and Older Men (n = 28)

Men	Score 0	1	2	3	4	5	6
Undergraduate (mean age = 20)		Inexperienced (1.0)	Conservative (2.1) Domineering[a] (2.3) Reserved (2.5) Liberal[a] (2.9)	Revealing (3.2) Aggressive (3.3) Outspoken[a] (3.4) Powerful[a] (3.4) Soft-hearted (3.4) Broad-minded (3.5) Individualistic (3.8) Direct (3.9)	Experienced (4.0) Feeling (4.0) Sensitive (4.1) Spontaneous (4.1) Open-minded (4.2) Arousable (4.2) Warm-hearted (4.3) Independent (4.3) Loving (4.6) Sensual (4.6) Compassionate (4.7) Exciting (4.7) Romantic (4.9) Passionate (4.9)		
Older (mean age = 52)		Inexperienced (1.2)	Conservative (2.6) Reserved (2.8)	Aggressive (3.1) Revealing (3.4) Soft-hearted (3.9) Direct (3.9)	Broad-minded (4.0) Individualistic (4.0) Independent (4.1) Open-minded (4.4) Experienced (4.6) Spontaneous (4.6) Arousable (4.6) Feeling (4.7) Warm-hearted (4.7) Sensitive (4.8) Compassionate (4.9)	Passionate (5.0) Exciting (5.0) Sensual (5.2) Loving (5.3) Romantic (5.4)	

Note. Each item was rated on a scale ranging from 0 (*not at all descriptive*) to 6 (*very much descriptive* [of a "sexual man"]). The numbers in parentheses represent the mean ratings of each item.
[a] Mean ratings by older men are unavailable for these items as they were added during the second phase of item selection.

(e.g., participation bias, refusal of items, over- and underreporting with explicit sexual content; Catania et al., 1990) were avoided by using the trait-adjective format. Therefore, our analysis focused on social desirability and affectively biased responding. One hundred fifty-two men completed the MCSDS and 75 men completed the PANAS to assess social desirability and positivity or negativity, respectively. The correlation of the MCSDS with the Men's Sexual Self-Schema Scale was nonsignificant and of low magnitude (.13), as was the correlation of negative affect with the sexual schema scale (−.01). The correlation of positive affect with the sexual schema scale was positive and significant (.36), as expected. The higher, although nonoverlapping, relationship with positive affect is consistent with our view of sexual self-schema as a positive aspect of the self. Taken together, these data add support to the internal validity of the scale.

For the analysis of convergent validity, data were obtained from 2 samples of undergraduate men (n = 84 and n = 86). Each sample completed a different set of sexually related measures to provide broadband coverage of important sexuality variables (see Appendix A for descriptions and psychometric data for the measures). We were interested in the correlation of the sexual self-schema total score with the sexuality measures. However, a more rigorous test would be to confirm different patterns of correlations across the factors, as the three factors represent unique, although related, aspects of sexual self-schema. Sexuality measures were selected so as to sample from previous individual difference and response measures assessing attitudinal–evaluative dimensions, sexual behavior (past and current), and sexual affects. Also, measures of romantic involvement were included to assess interpersonal aspects of sexual schema. With this series of measures (see Appendix A for psychometric information), we predicted that a positive sexual schema would be convergent (positively correlated) with positive sexual attitudes (e.g., men with positive sexual schemas would report more positive attitudes about sexuality and sexual behaviors in general), a more extensive sexual repertoire, and higher levels of sexual responding (such as sexual arousal). Because of the hypothesized importance of sexual self-schema to the formation of intimate relationships, we also expected convergent relationships with measures of love and romantic involvement.

Data are presented in Table 4. These correlations confirm predictions about the total score, and close inspection of the data affirms the three facets of men's sexual schema. As suggested by its label *Passionate–Loving,* Factor 1 evidences the strongest relationships with self-ratings of sexual arousal felt during sexual activities and feelings of love toward the most recent romantic partner. These data are in contrast to the zero-to-low correlations with attitudes toward sex in uncommitted relationships, hostility toward women, and sexually coercive behavior. The correlation with the number of love relationships was nonsignificant; this may be because the frequency with which men form romantic relationships (in contrast to their feelings when in a romantic relationship) may be influenced by a motivation or drive for sexual relationships (attributes more akin to Factor 2) than their capacity for loving or

Table 2
Factor Loadings of Male Sexual Self-Schema Scale Items

Item	Factor 1: Passionate–Loving	Factor 2: Powerful–Aggressive	Factor 3: Open-Minded–Liberal
Compassionate	**.79**	.06	−.01
Warm-hearted	**.78**	−.02	.01
Passionate	**.74**	.12	.08
Loving	**.73**	.11	−.03
Sensitive	**.72**	−.09	.04
Feeling	**.72**	−.01	.12
Romantic	**.66**	.17	.06
Soft-hearted	**.61**	−.15	.01
Sensual	**.43**	.21	.10
Arousable	**.32**	.24	.12
Aggressive	−.09	**.65**	−.11
Powerful	.06	**.65**	−.05
Outspoken	.01	**.56**	.12
Experienced	.14	**.56**	.12
Exciting	.22	**.53**	.15
Domineering	−.01	**.51**	−.19
Direct	.00	**.49**	.07
Spontaneous	.19	**.42**	.28
Independent	−.05	**.33**	.18
Inexperienced	.02	**−.31**	−.16
Revealing	.24	**.31**	.02
Individualistic	.02	**.29**	.24
Reserved	.02	**−.19**	−.09
Conservative	.11	.08	**−.60**
Liberal	.06	.03	**.59**
Open-minded	.26	.06	**.50**
Broad-minded	.17	.06	**.47**

Note. The boldface type indicates the factor assignment for each item.

passionate feelings. Moreover, men high on Factor 1 may be more apt to form long-term relationships and thus have fewer love relationships. Factor 1 also has moderate relationships with measures of sexual behavior (the extent of past and recent sexual activity and the number of one-night stands), although these relationships are lower in magnitude than correlations between Factor 2 and these behavioral variables.

Factor 2 (Powerful–Aggressive) is strongly associated with most of the sexual behavior variables, especially the number of lifetime sexual activities, the number of one-night stands, the number of lifetime sexual partners, and sexually coercive behavior (however, see Ross & Allgeier, 1996, for interpretative concerns regarding items from this measure). A strong relationship also existed with attitudes toward sex without commitment (SOI; Snyder et al., 1986), which includes both attitudinal and behavioral components. This pattern of correlations suggests that Factor 2 taps behavioral aspects of the sexual drive or motivation for sexual activity.

Factor 3 (Open-Minded–Liberal) has a pattern of correlations consistent with aspects of both Factors 1 and 2. For example, Factor 3 strongly correlates with feelings of love toward the most recent romantic partner (similar to Factor 1 and unlike Factor 2) and moderately correlates with sexually coercive behavior (like Factor 2 and unlike Factor 1). Factor 3 also shows moderate correlations with the other sexual behavior and arousal variables, suggesting that open-minded, liberal traits are relevant to both Factor 1 and Factor 2.

In tests of discriminant and incremental validity, measures assessed potentially relevant personality domains: self-esteem, extraversion, and neuroticism. These three dimensions were chosen

Table 3
Means and Standard Deviations of Male Sexual Self-Schema Scores and Factor and Total Score Intercorrelations

Scale	*M*	*SD*	1	2	3
1. Factor 1: Passionate–Loving	46.23	8.02	—		
2. Factor 2: Powerful–Aggressive	49.10	9.32	.35****	—	
3. Factor 3: Open-Minded–Liberal	14.72	4.08	.34****	.29***	—
Total score	109.93	16.23	.78****	.82****	.58****

*** $p < .001$. **** $p < .0001$.

Table 4
Pearson Product–Moment Correlations of Factor and Total Male Sexual Self-Schema Scores With Sexuality and Relationship Criterion Measures for Undergraduate Men (n = 84 and n = 86)

Dimension measure	Male sexual self-schema score			
	Factor 1: Passionate–Loving	Factor 2: Powerful–Aggressive	Factor 3: Open-Minded–Liberal	Total
Sexuality: attitudinal–evaluative				
Sex Without Commitment Index (SOI)	.14	.36***	.18	.35**
Hostility Toward Women Scale	.00	.13	.03	.06
Sexuality: behavior				
SES: Lifetime	.33**	.49****	.30**	.48****
SES: Current	.30**	.26*	.25*	.33**
No. of sexual partners	.21	.34**	.24*	.38***
No. of one-night stands	.25*	.35**	.24*	.41***
Sexual coercion	.14	.43****	.29**	.36***
Sexuality: affects				
Sexual Arousability Index	.36***	.28*	.28*	.40***
Romantic involvement				
Passionate Love Scale	.48****	.20	.42***	.47****
No. of prior love relationships	.05	.18	−.07	.12

Note. SOI = Sociosexual Orientation Inventory; SES = Sexual Experience Scale.
* $p < .05$. ** $p < .01$. *** $p < .001$. **** $p < .0001$.

because they have been linked to sexuality indicators. For example, self-esteem and extraversion are common sources of volunteer bias in sexual behavior and attitude research (e.g., relative to nonvolunteers, volunteers have dated more, have more varied sexual repertoires, have more experience with erotica, read more sex books [Catania, McDermott, & Pollack, 1986], and have higher self-esteem [Maslow & Sakoda, 1952]; see Catania et al., 1990, for a review). We were interested in how much of the variance in sexual attitudes and behaviors could be explained by sexual self-schema beyond that explained by other personality constructs. For these tests, the Rosenberg Self-Esteem Scale (Rosenberg, 1965), and Factors I (Surgency–Extraversion) and II (Neuroticism) from Goldberg's (1992) Big Five measure were administered to 59 undergraduate men. A series of hierarchical regression analyses was conducted. In each of the analyses, one of the three discriminant measures was entered as the first independent variable, followed by the total sexual self-schema score. Three variables were chosen as the to-be-predicted dependent variables because of their centrality to sexuality: (a) the range of lifetime sexual activities (SES: Lifetime from the DSFI; Derogatis & Melisaratos, 1979), (b) the participant's global rating of himself as a sexual man, and (c) reports of sexual arousability (SAI; Hoon et al., 1976; Andersen, Broffitt, Karlsson, & Turnquist, 1989; see Appendix A for descriptions and psychometric data for the personality and dependent measures).

With self-esteem, results indicated that sexual self-schema accounted for significant increments in explained variance in prediction of all three variables: For reports of lifetime sexual activities, incremental variance = 15%, $p = .001$; for the global rating of self as a sexual man, incremental variance = 19%, $p = .0001$; and for sexual arousability, incremental variance = 6%, $p = .05$. With Extraversion, results indicated that sexual self-schema accounted for significant increments in explained variance in the prediction of two out of three of the variables: For reports of lifetime sexual activities, incremental variance = 11%, $p = .01$; for the global rating of self as a sexual man, incremental variance = 8%, $p = .05$; and for sexual arousability, incremental variance = 4%, $p = .18$, *ns*. With Neuroticism, results indicated that sexual self-schema accounted for significant increments in explained variance in the prediction of two out of the three variables: For reports of lifetime sexual activities, incremental variance = 23%, $p = .001$; for the global rating of self as a sexual man, incremental variance = 28%, $p = .0001$; for sexual arousability, incremental variance = 6%, $p = .07$, *ns*. Taken together, these analyses support the incremental validity of the schema measure for use in predicting sexual behaviors and affects above and beyond the contribution of other, more general, personality constructs. (Note that these discriminant analyses were performed using a contrast group data set with $N = 59$. Because of the nature of data from extreme groups with some restriction in the standard deviation estimate, $N = 59$, $SD = 20.63$, from that of the larger screening sample, $N = 165$, $SD = 17.55$, estimates of the relationships between the variables may be somewhat inflated. Cohen and Cohen (1983) provide a correction for the restriction of range in these circumstances.)[2]

Study 5. Inspection of scale items and numerous informal posttest inquiries of participants revealed that the measure of men's sexual self-schema would be unobtrusive. A study of process provided empirical support for this conjecture. Specifically, a sample of 165 undergraduate men completed the scale. All items were randomly ordered. Participants were asked to generate three one- or two-word titles that could be used to describe the scale. Of

[2] With the Cohen and Cohen (1983) correction, the following are estimates of variance shared between sexual self-schema scores and the following variables in the population: SES: Current, 19% ($p = .0001$); global rating of self as a sexual man, 27% ($p = .0001$); SAI, 9% ($p = .0067$). As the use of such correction procedures with multiple linear regression analyses is unconventional, the hierarchical regression data are presented in the uncorrected format.

the 401 titles generated (M = 2.43), only 3 included the words *sex* or *sexuality,* with only 2 additional titles suggestive of sexuality. Only 5 titles included the words *love* or *romance.* Thus, virtually all of the men were unaware that a sexuality construct was being assessed. Instead, 98% of the titles described a general attribute or quality, with titles related to personality traits or personality characteristics (e.g., Self-Esteem, Confidence, Extraversion, Self-Image, Self-Description) demonstrating the holistic view men had for the scale.

Reliability

Internal Consistency

The Cronbach's alpha values for the Men's Sexual Self-Schema Scale and each factor are as follows: full scale, .86; Factor 1, .89; Factor 2, .78; and Factor 3, .65 (N = 667). These data, along with the factor intercorrelations, indicate adequate homogeneity of the scale as well as the contribution of each factor to the overall score.

Test–Retest

Reliability of the scale was obtained for a 9-week interval. In a sample of individuals selected for their extremely high or extremely low sexual self-schema scores at the initial testing, the total score reliability (N = 53) of the measure for 9 weeks was .81 (p = .0001).[3] This estimate is relatively high and reflects the stability characteristic of individual difference measures.

PART 2: CRITERION VALIDITY AND TESTS OF HYPOTHESES DERIVED FROM THE DEFINITION OF SEXUAL SELF-SCHEMA

This portion of the research tested the basic elements of the definition of sexual self-schema: specifically, sexual self-schema is a cognitive generalization about sexual aspects of the self that is (a) derived from past experience, (b) manifest in current experience, (c) influential in the processing of sexually relevant social information, and (d) a source of guidance to future sexual behavior (Andersen & Cyranowski, 1994; page 1092). We used the sexual self-schema measure (see Appendix B) to select and contrast groups of men with individual differences in sexual self-schemas: Men with high schema scores (*schematics*) contrasted with men with low schema scores (*aschematics*). These contrast groups were then assessed across time to confirm the stability of schema-relevant phenomena, as cross-situational consistency is an important element of individual difference measures.

Method: Participants

During the first week of an academic quarter, 165 undergraduate men were screened with the Men's Sexual Self-Schema Scale (see Appendix B). The mean schema score of the prescreened sample was 105.67 (SD = 17.55). Men scoring in the top and bottom thirds on the measure were then contacted to solicit their participation in a two-part study for course credit. Of these, 26 high scorers (schematics; M = 128.47, SD = 8.90) and 33 low scorers (aschematics; M = 83.94, SD = 8.14) agreed to participate. As would be expected, the groups differed significantly in sexual self-schema score, $F(1, 58) = 218.67$, $p < .0001$.

Men were tested in groups of 10 to 15 for a study entitled "Men's Self-Concept," which included a variety of measures assessing sexuality and sexual–romantic relationships (see Appendix A). A similar battery was completed by the men approximately 6 to 7 weeks later.

Procedures and Results

Hypothesis 1: Sexual Self-Schemas Are Cognitive Generalizations About Sexual Aspects of the Self

This hypothesis was tested with three indicators chosen to tap men's general views of their sexuality, sexual responsiveness, and sexual attitudes. First, participants rated themselves on a 9-point scale ranging from 0 (*much less sexual than most men my age*) to 8 (*much more sexual than most men my age*) at both the initial and the follow-up assessments. Using a 2 × 2 repeated measures design, a main effect for group was found, $F(1, 57) = 24.37$, $p < .0001$, with schematics rating themselves significantly more sexual (M = 5.38) than aschematics (M = 2.69). Further, there was no main effect for time or the Group × Time interaction, indicating no change in mens' sexual self-views. Second, the SAI (Hoon et al., 1976; Andersen, Broffitt, Karlsson, & Turnquist, 1989) was used to assess the men's self-reported capacity to become sexually aroused in a variety of sexual situations and activities (including response to erotica, masturbation, body caressing, oral–genital sexual contact, and sexual intercourse with a partner). As predicted, the two groups significantly differed in SAI scores, $F(1, 57) = 7.61$, p = .01, with the schematics reporting greater sexual arousal than aschematics (with mean SAI scores of 65 and 59, respectively). A main effect was also found for time, $F(1, 50) = 4.71$, p = .05, with the participant scores increasing slightly, from 60 to 63, over the 7-week period. As predicted, however, there was no Group × Time interaction. Third, the SOI (Simpson & Gangestad, 1991a), a measure of sexual attitudes regarding one's willingness to engage in uncommitted sexual relations, was administered at the initial assessment only. Again, we found the predicted group contrast, $F(1, 52) = 9.05$, p = .01, with a significantly higher SOI score for the schematic group (M = 76) in contrast to the aschematics' score (M = 50).

Hypothesis 2: Sexual Self-Schemas Are Derived From Past Experiences

Self-schemas develop as people observe and categorize their own response consistencies over time. Hence, there should be measurable differences in the sexual behavior repertoires of our sexual self-schema groups. Specifically, schematic men should report a wider range of sexual activities, more sexual partners, and more frequent short-term (e.g., one night only) sexual encounters. These particular variables were tested as indicators of the men's sexual histories using the SES: Lifetime (Derogatis & Melisaratos, 1979; Andersen & Broffitt, 1988) and individual questionnaire items (see Appendix A for psychometric information). As predicted, significant group differences were obtained for each variable. Schematic men reported having experienced a significantly wider range of sexual activities (10 vs. 6, with a possible range of 0–13), $F(1, 57) = 17.86$, $p < .0001$; more sexual partners in their lifetime (8.08 vs. 1.69 persons), $F(1, 55) = 5.96$, p = .05; and

[3] This coefficient is .77, with correction for inflation of range according to the procedure outlined in Cohen and Cohen (1983) and used in Study 4.

more brief sexual encounters in their lifetime (1.84 vs. 0.66), $F(1, 55) = 6.20$, $p = .05$.

Although sexual self-schema should have obvious relevance to sexual relationships, we also predicted that a positive view of one's sexuality might facilitate romantic involvement. Thus, we examined men's romantic histories and also assessed romantic feelings toward current partners (see Appendix A for psychometric information). Consistent with our perspective on the romantic implications of sexual self-schema, at the initial assessment 30% of the aschematic men reported that they had never fallen in love, whereas only 8% of the schematic men reported that they had never been in love, $\chi^2(1, N = 58) = 4.59$, $p = .05$. In addition, schematic men reported that they had fallen in love more often during their lifetime (2.5 times vs. 1.3 times), $F(1, 57) = 8.39$, $p = .01$. These results suggest that men with a positive (schematic) view of their sexuality are not only sexual, but also more likely to become romantically involved and experience feelings of intimacy and love.

Hypothesis 3: Sexual Self-Schema Is Manifest in Current Experiences

To assess current sexual activity, men completed the SES: Current (Andersen & Broffitt, 1988; Derogatis & Melisaratos, 1979), endorsing each of 13 sexual activities (e.g., masturbation, oral–genital sexual contact) that had occurred within the last 30 days. The 2 × 2 repeated measures analysis of variance (ANOVA) indicated a significant effect for group, $F(1, 57) = 11.61$, $p = .001$, with no significant effects for time or the Group × Time interaction, confirming that the schema score was related to stable behavioral differences in the samples. To examine the relationship between sexual schema and current romantic involvement, we asked men if they were currently involved with a partner. At the initial assessment, 69% of the schematics were involved in a relationship, whereas only 30% of the aschematics were involved, $\chi^2(1, N = 58) = 8.84$, $p = .01$. Seven weeks later the same effect was evident: 76% of the schematics were involved in a relationship, whereas only 31% of the aschematic men were involved, $\chi^2(1, N = 52) = 10.25$, $p = .001$.

Hypothesis 4: Sexual Self-Schema Guides Future Sexual Behavior

Well-elaborated sexual self-views should serve as a marker from which to guide future judgments, predictions, and decisions in the sexual–romantic domain. Hence, we hypothesized that men would make predictions regarding future sexual behaviors that were consistent with their sexual self-representations. Specifically, schematic men should anticipate a higher level of sexual activity and greater partner involvement; aschematic men, in contrast, were expected to be more conservative in their predictions about their sexual futures. For this hypothesis, we asked men at the initial assessment to estimate the number of sexual partners they anticipated having during the remaining portion of the academic quarter (6–7 weeks into the future). As predicted, ANOVAs indicated that the groups significantly differed, $F(1, 55) = 13.61$, $p = .001$, with schematic men estimating a mean of 1.44 partners and aschematic men estimating a mean of 0.63 partners.

PART 3: TESTS OF COGNITIVE SCHEMATIC PROCESSING

These studies test the notion that sexual self-schema is, indeed, a cognitive phenomena. In early work, Markus (1977) illustrated the cognitive aspects of a well-elaborated self-schema by showing information-processing differences among schematic and aschematic individuals. These included the ability of schematics (in contrast to aschematics) to easily retrieve domain-relevant behavioral evidence for one's schema and to rapidly make domain-relevant judgments about the self. Thus, we predicted that schematic men would have easy access to schema-relevant information about themselves, which they could use to make rapid and consistent sexual self-judgments. To maximize the test of this effect, we included both positive and negative valence, sexually relevant stimuli.

Method: Participants

During the first week of two consecutive academic quarters, undergraduate men were screened with the Men's Sexual Self-Schema Scale. Men scoring in the top and bottom thirds on the measure were contacted 2 to 6 weeks later to solicit their participation in a study for course credit. Participants were primarily Caucasian (86%), unmarried (99%), young (mean age of 19 years), undergraduates (mean education of 13.3 years) who described themselves as primarily or exclusively heterosexual (99%). Of these, 59 men (20 schematic and 39 aschematic) participated in a study for the test of Hypothesis 1 (see below), and another 151 men (75 schematic and 76 aschematic) participated in a study for the test of Hypothesis 2 (see below).

Procedures and Results

Hypothesis 1: Sexual Self-Schema Facilitates the Retrieval of Domain-Relevant Behavioral Evidence

For this study, the 59 participants (20 schematic and 39 aschematic) completed a task designed to retrieve past schema-relevant information. Participants were assessed in groups of 10 to 20. Participants received booklets containing 17 words, 1 listed at the top of each page. Eleven items were selected to tap positive facets of men's sexual self-views (e.g., *passionate, sexy, loving, powerful, liberal*), and a smaller sample of three items was chosen to tap potentially negative facets of men's sexual self-views (i.e., *conservative, cautious, inexperienced*). Three filler items were also included. Similar to other procedures (e.g., Cacioppo & Petty, 1980; Markus, 1977), the following instructions were used:

> Circle the word if it is a term that describes you. Immediately after you circle an adjective, list the reasons why you feel this adjective is self-descriptive. Give specific evidence from your own past behavior to indicate why you feel a particular trait is self-descriptive. List the first kinds of behaviors that come to your mind. The information is anonymous. Use your own frame of reference.

To clarify the task, following the instructions we gave the participants an example in which a respondent had circled the word "sloppy" and written three examples of his sloppiness (e.g., "My room is usually a complete mess").

To test the hypothesized within-subject and interaction effects, we conducted a 2 (× 2) repeated measure ANOVA. In the analysis, group (schematic vs. aschematic) was the between-subjects

factor and word type (positive vs. negative valence) was the within-subjects factor. As predicted, the 2 (× 2) ANOVA indicated a significant Group × Word Type interaction, $F(1, 57) = 20.07$, $p < .001$. Further, follow-up one-way ANOVAs indicated significant group effects for both the positive, $F(1, 58) = 6.70$, $p < .05$, and negative, $F(1, 58) = 5.66$, $p < .05$, valence word types. As shown in Figure 1, men with a schematic view generated significantly more behavioral evidence for schema-consistent positive adjectives (an average of 14.47 words per positive item vs. the aschematics' average of 9.88 words per positive item) and significantly less evidence for schema-inconsistent, negative valence words (generating an average of only 4.92 words per negative item) in comparison with the significantly more frequent negative self-descriptions (an average of 11.62 words per negative item) of the aschematic men. Examples of schema-consistent evidence for particular stimulus words include the following: for *forward,* "I just asked a girl to call me today on the way to this experiment" and "I try to go a little too far on first dates"; for *aggressive,* "I try to get what I want" and "I sometimes try to overpower or overtalk a girl"; for *warm-hearted,* "I am always sensitive to the needs of others, like my girlfriend"; and for *erotic,* "I think I can arouse a woman" and "I can act very sexy at times."

Hypothesis 2: Sexual Self-Schema Facilitates Cognitive Processing of Sexually Relevant Information About the Self

For this study, 151 participants completed a timed self-judgment task. Participants were tested in groups of 4 to 8 individuals. Each person was seated at a computer in a large laboratory. Fifty stimulus words were presented individually in a yellow rectangle positioned in the center of the monitor. Participants were instructed to indicate whether each word was self-descriptive by pressing either a *ME* or a *NOT ME* response key, denoted with a green or red marker placed on the / (right side) or *z* (left side) keys of the keyboard. A male experimenter instructed participants to maximize both the speed and the accuracy of their responses (see Fazio, 1990, for a discussion of this procedure). Item order was randomized across participants, and each word was presented with a 2-s lapse. Response pattern and response latencies (reaction time) were recorded with an internal timing program. The reaction time program was developed with LabView-based software, used on 486 DX-33 MHz DOS computers with SVGA color monitors, and the laboratory was networked with Microsoft Windows 3.11 for Workgroups.

To become familiar with the judgment and reaction time tasks, participants first completed a practice trial of 25 items that were not sexually relevant. Next, the experimental trial occurred, with a randomly ordered set of 24 stimulus words and 26 filler words. Of the sexually relevant stimulus items, half were positive valence (e.g., *compassionate, powerful, open-minded*) and half were negative valence (e.g., *unfeeling, passive, conservative*). Stimulus items included 11 words from the Men's Sexual Self Schema Scale and 13 words known by the experimenters (from the prior item selection process) to be conceptually relevant. Filler items were 13 positive and 13 negative valence adjectives related to the dimensions of intelligence, agreeableness, and humor.

To test the hypothesized within subject and interaction effects, we conducted two 2 (× 2) repeated measures analyses of covariance (ANCOVAs). In both analyses, group (schematic vs. aschematic) was the between-subjects factor and word type (positive vs. negative valence) was the within-subjects factor. For each analysis, a single covariate was used (see Fazio, 1990, for a discussion). For response pattern outcomes, endorsement of filler items (i.e., the number of ME responses) was the covariate, to adjust for "yea-saying" or "nay-saying" response biases. For response latency outcomes, the mean latency for responding to filler items was the covariate to control for individual differences in latencies

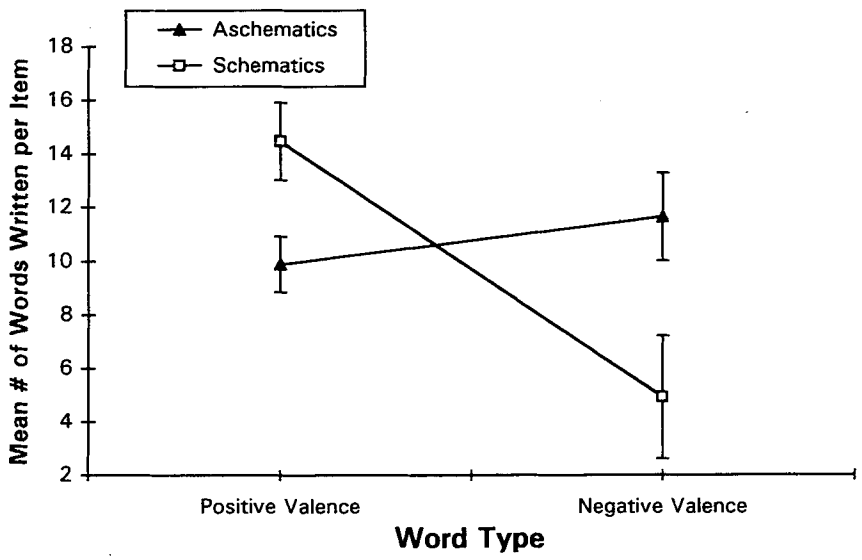

Figure 1. Results of retrieval of behavioral evidence task in mean number of words written per item within groups as a function of valence of the word cue. The vertical lines depict standard errors of the means.

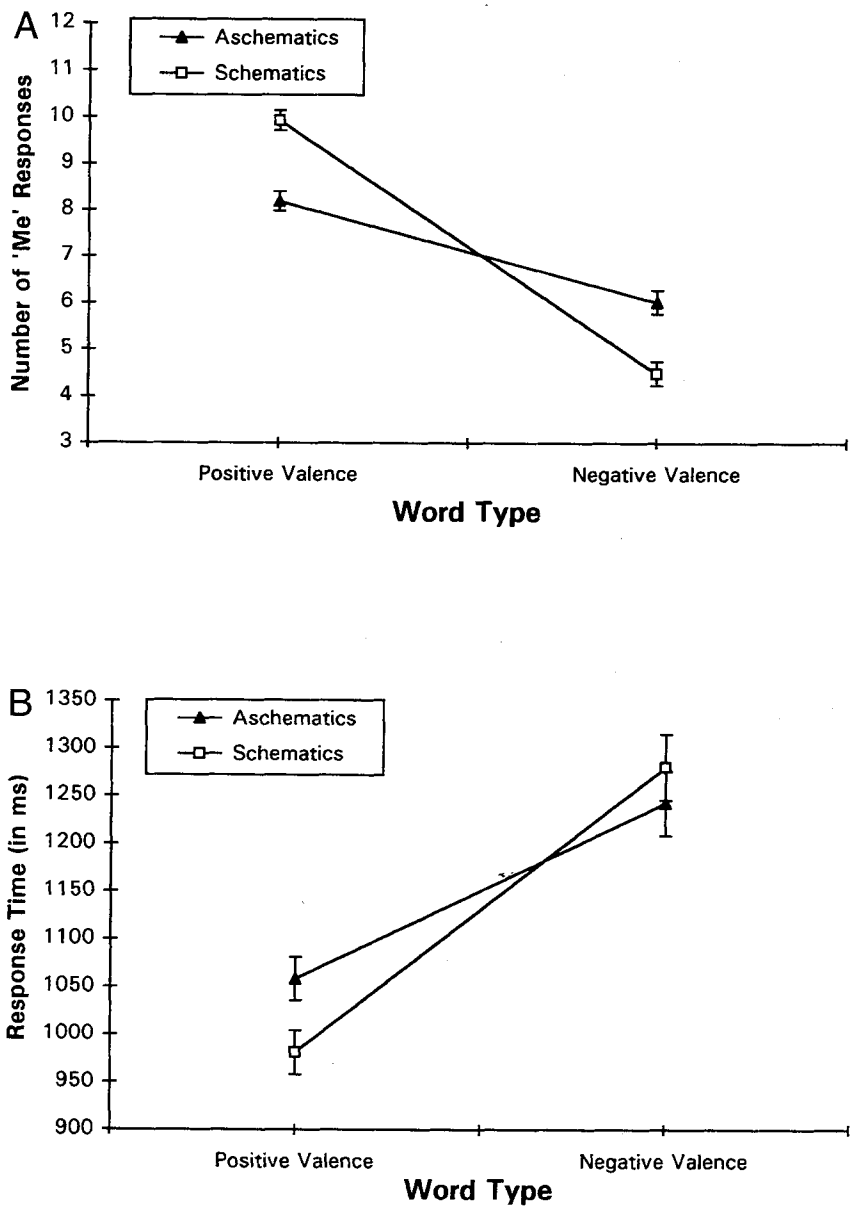

Figure 2. Results of the timed self-judgment task. A: the mean number of "ME" responses within groups as a function of the valence of the word cue is shown. B: the mean response latency in milliseconds to the "ME" responses within groups as a function of the valence of the word cue is shown. For both A and B, the vertical lines depict standard errors of the means.

due to such factors as reading speed, motor coordination, and motivation. For significant interaction effects, follow-up one-way ANCOVAs were conducted to test for group effects for response pattern and latency outcomes for both the positive and negative valence words.

A 2 (× 2) ANCOVA was calculated for the number of ME responses to target words.[4] As predicted, there was a significant Group × Word Type interaction, $F(1, 148) = 43.81, p < .001$ (see Figure 2A). Results of the two follow-up one-way ANCOVAs indicated significant main effects for group for both the positive, $F(1, 150) = 33.57, p < .001$, and the negative, $F(1, 150) = 18.39$, $p < .001$, valence word types. As indicated in Figure 2A, the schematic group endorsed significantly more schema-consistent, positive adjectives (9.92 vs. the aschematics' 8.18) and signifi-

[4] Some investigators (e.g., Markus, 1977) also perform analyses on the NOT ME data as well. We had found in our other reaction time studies (see Cyranowski & Andersen, in press) that there is significant differential attrition for the NOT ME data, with all female aschematics having NOT ME data to positive words, for example, but female schematics providing no or very few NOT ME responses to the positive items. On the basis of this experience, we anticipated the same data pattern with men. In fact,

cantly fewer schema-inconsistent, negative adjectives (4.49 vs. the aschematics' 6.02).

Examination of the reaction time data produced comparable findings. A 2 (× 2) ANCOVA was calculated for mean latencies for ME responses, and, as predicted, there was a significant Group × Word Type interaction, $F(1, 144) = 4.64$, $p < .05$ (see Figure 2B). A follow-up ANCOVA indicated a significant group main effect for reaction time to the positive valence words, $F(1, 146) = 5.6$, $p < .05$. As indicated in Figure 2B, schematic males endorsed the schema-consistent, positive traits significantly more quickly (mean latency = 981.15 ms) than their aschematic counterparts (mean latency = 1,058.32 ms). Notably, both schematic and aschematic men displayed significant latencies in their endorsements of the negative valence stimulus words (with mean reaction times of 1,280.75 ms and 1,242.46 ms, respectively). Hence, although the aschematics endorsed more of the negative valence words than did the schematics, they did not appear to display a facilitation in the cognitive processing of negative attributes.

GENERAL DISCUSSION

These studies indicate that there are systematic individual differences among men in their view of the sexual self, that these cognitive sexual self-views can be reliably and validly measured, and that they predict sexual behaviors, responses, and cognitions. As indicated previously for women and now documented for men,

> This sexual self-view, or sexual schema, is defined as a cognitive generalization about sexual aspects of the self. The view is derived from past experience, manifest in current experience, influential in the processing of sexually relevant social information, and gives guidance for sexual behavior (Andersen & Cyranowski, 1994, p. 1092)

The stages of scale development examined 300 trait adjectives for the selection of the final 27 items. Classic tests of construct validity were used in six studies. The validity analyses can be briefly summarized. The Men's Sexual Self-Schema Scale has convergent yet incremental validity with other individual difference approaches, including measures of general relevance (e.g., self-esteem), as well as measures of specific relevance to sexuality (e.g., extroversion). Studies of measurement error indicate that the Men's Sexual Self-Schema Scale is not hampered by social desirability or biased by negative affect. Studies of process indicate that the scale has significant methodological advantages in using the trait lexical approach (e.g., Galton, 1884). With its discrete and unobtrusive item format, it is not vulnerable to the types of participation bias and measurement errors common to many other sexuality methodologies and measures (Catania, Gibson, Chitwood, & Coates, 1990). Finally, there was conceptual and empirical overlap in the words selected for younger and older men, as indicated in Table 1. Including this requirement of item equivalence between older and younger samples at the first stage of the item-selection process has proved to be a powerful strategy for ensuring the generalizability of the construct across a wide age range with female samples (e.g., see Andersen, Woods, & Copeland, 1997). Future studies with older male samples will be necessary, however, to provide additional empirical support for the generalizability of the sexual self-schema construct in older male populations. In sum, however, the measure appears to represent the first assessment measure of a cognitive view of the male sexual self, and it is one with reliability, broadband validity, and incremental utility for explaining and predicting sexual phenomena.

What Is Men's Sexual Self-Schema?

A semantic representation of a sexually schematic man was obtained. Specifically, a sexually schematic man is one who experiences emotions of passion and love, yet sees himself as being powerful and aggressive, and is open-minded and liberal in his sexual attitudes. The data suggest that schematic and aschematic men have very different sexual selves. Schematic men are, unquestionably, sexually experienced. They have a high frequency of sexual relationships—some of which occur without commitment—and they have a broader repertoire of sexual behaviors. These are reinforcing behaviors, as the men report high levels of sexual arousal. Yet, these men may also be the most capable of feelings of romantic love and passion. They are more apt to be in a relationship, and if in a relationship, they have romantic feelings and fall in love. Even if there is no present relationship, being single is likely to be a temporary phenomenon.

Conversely, aschematic men have very different sexual lives. They have a narrower range of sexual activities and have had significantly fewer, if any, sexual partners. Whereas schematic men were likely (e.g., 76%) to be involved with a partner, the majority (70%) of the aschematic men were not involved, and even across the short term (e.g., 2 months), the men did not foresee this situation changing, and indeed it did not. These affects and behaviors are consistent with their own self-ratings and thoughts about their sexuality; aschematic men viewed themselves as much less sexual in comparison with their peers.

The three-factor semantic representation of men's sexual self-schema is consistent with previous research on gender differences in personality and sexuality. In particular, Factor 2 (Powerful–Aggressive) is conceptually similar to the personality concepts of assertiveness and agency (e.g., Factor 2 items such as *aggressive, outspoken, experienced, domineering,* and *direct*) described by Feingold (1994) and Bakan (1966). It also is consistent with the finding that men's self-esteem is dependent on their ability to individuate themselves (e.g., Factor 2 includes items such as *independent* and *individualistic*; Josephs et al., 1992). The pattern of data in Table 4 suggests that Factor 2 exerts its strongest effect on sexual drive or inclination to engage in sexual experiences, and that stereotypical male characteristics are central in facilitating men's motivation or drive for sexual activity, per se. Although the traits of Factor 1 (Passionate–Loving) are also consistent with facilitating sexual drive, Factor 1 appears to exert its strongest effects affectively through the experience of love and passionate feelings. In addition, the personality and sexuality literatures have suggested that openness would play a role in men's sexuality, and indeed the items on Factor 3 best represent that dimension. Moreover, the pattern of data in Table 4 suggests that the dimension of

there was differential attrition, with all of the aschematics having NOT ME data, but there were no NOT ME responses from 17% of the schematic group. Regardless, analyses were run, the reaction times were somewhat slow (between 1,190 and 1,260 ms), and there were no group or word type main effects and no interaction.

openness may not only activate the qualities of Factor 2, but may do the same for Factor 1. This suggests that a schematic male is "open" to balancing stereotypical male qualities with ones of strong affiliation, emotional attachment, and love. In sum, the subordinate constructs defining men's sexual self-schema are consistent with prior personality literatures, yet the construct of men's sexual self-schema adds predictive validity beyond personality domains such as extraversion or neuroticism, and, more generally, self-esteem.

Data from Parts 2 and 3 document that men's sexual self-schema is, indeed, a cognitive phenomenon. Suggestions of the importance of cognitive factors in sexuality appeared in Gagnon and Simon's (1973) writings about the notion of intrapsychic, interpersonal, and cultural sexual scripts. Yet, the schema concept is novel to sexuality research. Schemas are typically viewed as internal knowledge representations or cognitive frameworks that moderate the relationship between external social stimuli and an individual's behavioral reactions. We learned in Part 3 that men could accurately and efficiently make judgments about themselves as sexual persons, and they could generate evidence to support such decisions. Thus, there are individual differences among men in their views of their sexuality, and, moreover, men are aware of their own view—they can see it, judge it, and document it.

Comparison of Men's and Women's Self-Schemas

We are able to make comparisons between the gender-specific measures of sexual self-schema (i.e., men's view of a sexual man and women's view of a sexual woman). In doing so, we are making comparisons between how men view a sexual man and how women view a sexual woman. This comparison is possible, in part, because in the construction of both schema measures we empirically bootstrapped them from a similarly large item pool, used nearly identical item selection techniques and so on. In so doing, the data for each gender determined the content and structure of male and female constructs. We note that our method is different from what has historically been the method in measure development in sexuality.[5]

We begin with the areas of seeming similarity. Both scales have a primary dimension (Factor 1) assessing passionate–romantic traits, with a 50% item overlap in items between the scales. Indeed, both men and women believe that a sexual person is one who is sexual, in part, by evidencing romantic, passionate, arousable, compassionate, and loving qualities. Participants of both genders also describe for themselves a trait dimension of openness, and again there is some overlap at the item level (i.e., the eight-item women's Factor 2 and the four-item men's Factor 3 both include *open-minded* and *broad-minded*). However, the data indicate that the two scales function in slightly different ways for the genders. For women, it is clear that the Open–Direct (Factor 2) traits facilitate behavioral activation (or sexual activity), per se. For men, the Open-Minded–Liberal (Factor 3) facilitates behavioral activation and emotional involvement. This difference is strikingly evident in correlations of the factors with Hatfield and Sprecher's (1986) Passionate Love Scale; for men, the Open factor correlation is .47, and for women the Open factor correlation was .00 (Andersen & Cyranowski, 1994).

Aside from these areas, there are valence and content differences in the scales, too. In terms of valence, the three factors and 89% of the items for the men's scale are positive, whereas one of the three factors (i.e., Factor 3: Embarrassed–Conservative) and 31% of the items for the women's scale are negative in valence. Inspection of the items on the women's Factor 3 (e.g., *embarrassed, conservative, cautious, self-conscious, timid*) reveals some similarities to the Neuroticism construct (e.g., *anxiety, guilt, self-consciousness*) of Eysenck (1971, 1972). We have found that Factor 3 functions as a deterrent to sexual–romantic affects and behaviors (Andersen & Cyranowski, 1994; Cyranowski & Andersen, 1998), perhaps akin to Eysenck's findings that women high in Neuroticism were also less sexually experienced. There was no such finding for men who were high in Neuroticism. Feingold (1994) reported that women tended to be higher in anxiety than were men. Therefore, it is not surprising to find a factor reflecting anxiety-related traits on the women's measure and not on the men's measure. As a final note, in addition to being consistent with the personality literature, the adverse impact of Factor 3 on women's sexual self-view and the subjective meaning of the Factor 3 traits is consistent with the role of anxiety in the occurrence of sexual dysfunctions for women, particularly arousal and orgasmic deficits (Andersen, 1983; Andersen & Cyranowski, 1995).

The absence of a negative factor, or even multiple items with a negative valence, for men is not random. In the item-generation process for the scale, many negative items were included, but they were excluded one by one because of significant (negative) overlap with measures of social desirability or self-esteem (these same criteria were used, of course, for the women's items). In the final analysis, only three items remained (i.e., *conservative, reserved,* and *inexperienced*) for the men's scale that were correlated with the criterion measures and yet not confounded with measurement error. This suggests that men are more reluctant to endorse negative traits. In fact, the data from Part 3 show that both schematic and aschematic men took significantly longer times to endorse sexually relevant traits of a negative valence. For men, it may be less damaging to their self-esteem to admit that positive traits are less descriptive of themselves than it is to admit that negative traits are more self-descriptive. This phenomenon, found by using the same methodology in the development of both sexual self-schema scales, is consistent with the meta-analytic summary of the personality literature by Feingold (1994), which suggested that men provide, on average, slightly higher ratings of self-esteem.

For women, the presence of two dimensions in their scale—that is, both positive and negative sexual self-views—offers the possibility of constructing a *bivariate* (in contrast to a bipolar) model,

[5] On occasion, researchers have used an expeditious route to the development of gender-specific versions of scales. That is, a measure is developed for men (or women) and the wording of the items is slightly altered so that the measure might be used for women (or men, as the case may be). The next step might be to compare the factor structure for these similar items used with men and women and document any differences. This approach tries to fit women into a structure previously delineated with groups of men (or vice versa). In contrast, the schema measures are, empirically, gender specific. Future research could directly compare these measures in terms of their predictive value (e.g., a researcher might have men fill out both the male and the female versions of the scales to determine which scale best predicts male sexual behavior and responsiveness).

allowing both positive and negative dimensions to have some functional independence, be opposing in their effects on behavior, and provide for effects that are due to differential levels of activation. When a bivariate model is used in conceptualizing women's sexual self-views, it contrasts not only *schematically positive* women (i.e., those endorsing strong positive but weak negative self-views) from women with *aschematic* self-views (i.e., those endorsing both weak positive and weak negative self-views), but also *schematically negative* women (i.e., those endorsing weak positive but strong negative self-views) and women with *coschematic* self-views (i.e., those endorsing both strong positive and strong negative self-views). Our subsequent research indicates that this categorization reveals affective, behavioral, and cognitive processing differences among women (Cyranowski & Andersen, 1998, in press).

For men, the assessment of men's sexual self-schema as a unidimensional construct has provided a simple yet powerful tool in the prediction of men's sexual behaviors, responses, and attitudes. Men can be described along a continuum from sexually schematic (high scorers) to sexually aschematic (low scorers). On the men's scale, there are gender-specific traits, such as *aggressive, powerful, experienced, domineering,* and *individualistic.* The data in Table 4 suggest that these traits have strong behavioral activation qualities, in that they are highly correlated with the level of sexual behaviors. It is perhaps important to note that although these are the stereotypical male personality traits (e.g., Feingold, 1994; Josephs et al., 1992; Lippa, 1995), these were not the traits that men chose as most descriptive of a sexual man, as indicated in Table 1. Instead, men—young and old alike—indicated that a sexual man is best characterized by Factor 1 attributes: Sexual men are those who are compassionate, warm-hearted, passionate, and loving. In line with Zilbergeld's (1992) beliefs regarding the tensions inherent in male sex roles, future research many examine the interplay between gender-consistent powerful–aggressive versus gender-inconsistent passionate–loving aspects of men's sexual self-views; a bivariate approach to men's sexual self-views could, indeed, examine these issues.

Summary

We have proposed the construct of sexual self-schema as a novel individual difference variable representing a cognitive view of sexuality. Complementary to our prior research with women, we found that men's sexual self-views are products of past experience, manifest in current experience, influential in the processing of sexually relevant social information, and able to provide a cognitive framework for sexual behavior, responses, and affects. A reliable, unobtrusive measure with strong evidence of construct and predictive validity was constructed. We also found that the measure does, indeed, tap sexually relevant cognitive domains. Future research will elaborate on the place of the sexual self-schema construct in sexuality and personality research domains.

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(Appendixes follow)

Appendix A

Description of Measures Used for Criterion, Convergent, and Discriminant Validity Studies

Dimension/subject area	Measure	Reference	Format: No. of items	Format: Example	Format: Scoring or rating key	Psychometric data: Min/max score	Psychometric data: Internal consistency	Psychometric data: Test–retest (lag)
Response set/style								
Negativity	Positive and Negative Affect Schedule	Watson et al. (1988)	10	Scared, upset, guilty	0 = *not at all*, 4 = *extremely*	0/40	.85	.47 (2 months)
Social desirability	Marlowe–Crowne Social Desirability Scale	Crowne & Marlowe (1960)	33	"I have never intensely disliked anyone."	0 = *false*, 1 = *true*	0/33	.83	.85 (2 months)
Personality								
Self-esteem	Rosenberg Self-Esteem Scale	Rosenberg (1965)	10	"I certainly feel useless at times."	0 = *strongly agree*, 3 = *strongly disagree*	0/10	.88	.82 (1 week)
Neuroticism		Goldberg (1992)	20	Relaxed, optimistic, insecure, unhappy	0 = *not descriptive*, 6 = *very much descriptive*	−48/112	.84	—
Extraversion		Goldberg (1992)	20	Active, assertive, bold, reserved, shy, passive	0 = *not descriptive*, 6 = *very much descriptive*	−80/80	.90	—
Evaluation of sexually relevant attitudes								
Casual sex	Sex Without Commitment Index from the SOI	Snyder et al. (1986)	7	Predicted no. of partners in the next 5 years	Items are summed	0/7	.73	—
Hostility	Hostility Toward Women Scale	Check et al. (1985)	30	"It's safer not to trust women."	0 = *false*, 1 = *true*	0/30	—	—
Overview	Global sexuality rating		1	"Rate yourself as a sexual man."	0 = *much less sexual than most men*, 8 = *much more sexual than most men*	0/8		—
Sexual behavior								
Range of activity	Sexual Experience Scale: Lifetime	Derogatis & Melisaratos (1979)	24	Kissing, intercourse	0 = *never*, 1 = *experienced*	0/24	.84	.72 (1 month)
	Sexual Experience Scale: Current	Derogatis & Melisaratos (1979)	24	Kissing, intercourse	0 = *never*, 9 = *2–3 times a day*	0/216	.88	.72 (1 month)
Sexual coercion	Sexual Experiences Survey	Koss & Oros (1982)[a]	12	Misinterpretation of desired intimacy; use of threats or force	0 = *no*, 1 = *yes*	0/12	.89	.61 (1 month)
Sexual affects								
Sexual arousal	Sexual Arousability Index (SAI)	Hoon et al. (1976)	28	Masturbation, oral–genital sexual contact	0 = *unpleasant*, 6 = *extremely arousing*	0/168	.92	.74 (4 months)
Sexual anxiety or aversion	Modified SAI	Chambless & Lifshitz (1984)	28	Masturbation, oral–genital sexual contact	0 = *pleasant*, 6 = *extreme anxiety*	0/168	.94	—
	Sexual Aversion Scale	Katz et al. (1989)	10	"I avoid sexual activity"	0 = *not at all*, 3 = *a lot*	0/30	.85	.86 (4 weeks)
Romantic involvement								
Affect: love	Passionate Love Scale	Hatfield & Sprecher (1986)	15	"My thoughts are constantly of ———."	0 = *not at all true*, 9 = *extremely true*	0/135	.91	—
Relationship history	No. of prior relationships		2	"Have you ever been in a love/romantic relationship?"	0 = *no*, 1 = *yes*	0/1		—
	Current relationship status		1	"What kind of relationship is it?"	0 = *not applicable*, 5 = *married*	0/5		—

Note. Dashes signify that data were not available. SOI = Sociosexual Orientation Inventory.
[a] See also Ross and Allgeier (1996) for a discussion of the psychometric properties of this measure.

Appendix B

Describe Yourself (Form M)

Directions: Below is a listing of 45 adjectives. For each word, consider whether or not the term describes you. Each adjective is to be rated on a 7-point scale ranging from 0 = *not at all descriptive of me* to 6 = *very much descriptive of me.* Choose a number for each adjective to indicate how accurately the adjective describes you. There are no right or wrong answers. Please be thoughtful and honest. Question: To what extent does the term_____describe me? Rating scale:

Not at all descriptive	0	1	2	3	4	5	6	Very descriptive

1. humorous	16. *open-minded*	31. *sensitive*
2. *conservative*	17. sloppy	32. responsible
3. smart	18. *feeling*	33. *reserved*
4. *soft-hearted*	19. *arousable*	34. *experienced*
5. unpleasant	20. rude	35. good natured
6. *powerful*	21. *broad-minded*	36. *romantic*
7. *spontaneous*	22. *passionate*	37. shy
8. shallow	23. wise	38. *compassionate*
9. *independent*	24. *aggressive*	39. *liberal*
10. *inexperienced*	25. polite	40. kind
11. *domineering*	26. *revealing*	41. *individualistic*
12. healthy	27. *warm-hearted*	42. *sensual*
13. *loving*	28. stingy	43. *outspoken*
14. helpful	29. *exciting*	44. lazy
15. passive	30. *direct*	45. excitable

Note. Scoring instructions: The 27 Men's Sexual Self-Schema Scale items are in italics. Factor scores are calculated by summing ratings on the items listed below. Items 2, 10, and 33 are reverse keyed. Factor 1 = 4, 13, 18, 19, 22, 27, 31, 36, 38, and 42; Factor 2 = 6, 7, 9, 10, 11, 24, 26, 29, 30, 33, 34, 41, and 43; Factor 3 = 2, 16, 21, and 39. Men's Sexual Self-Schema Scale score: Total = Factor 1 + Factor 2 + Factor 3.

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